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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,660	02/06/2002	Shihoko Sekiguchi	500.41164X00	5726

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EXAMINER

ABEL JALIL, NEVEEN

ART UNIT PAPER NUMBER

2165

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/066,660

Applicant(s)

SEKIGUCHI ET AL.

Examiner

Neveen Abel-Jalil

Art Unit

2165

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 and 6 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**SAM RIMELL**  
**PRIMARY EXAMINER**

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Remarks

1. The amendment filed on December 13, 2004 has been received and entered. Claims 1-9 are pending.

2. Applicant's amendment to overcome U.S.C. 112<sup>nd</sup> rejection is hereby acknowledged and the rejection is withdrawn.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, and 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Yanai et al. (U.S. Pub. No. 2004/0073831 A1).

As to claim 1, Yanai et al. discloses a storage resource operation managing method in a storage network arranged by a node for transmitting an access -request via a network to a storage and by a storage group constituted by at least one storage resource which receives said access request so as to execute a content of the access request, said storage resource operation managing method (See Yanai et al. page 21, paragraph 0262), comprising the steps of:

acquiring at least one of a logical distance and a geographical distance from at least one of, said node and said storage resources contained in said storage group, and said storage resources contained in said storage group (See Yanai et al. page 18, paragraphs 0232-0233);

acquiring from said node, a requirement range with respect to at least one of said logical, distance and said geographical distance (See Yanai et al. page 3, paragraphs 0029-0031); and

selecting at least one storage resource for executing access request issued from said node from said storage group, while at least one of said requirement range with respect to said logical distance and said requirement range with respect to said geographical distance is set as a selecting condition (See Yanai et al. page 21, paragraphs 0258-0260).

As to claim 2, Yanai et al. discloses wherein as said storage resource selecting condition, at least one storage resource is selected which is located within said requirement range of at least one of said logical distance and said geographical distance (See Yanai et al. page 28, paragraph 0443, and see Yanai et al. page 28, paragraph 0465).

As to claim 3, Yanai et al. discloses within at least one storage resource located in said requirement range, at least such one storage resource is selected whose at least one of said logical distance and said geographical distance is closer than those of other storage resources (See Yanai et al. page 8, paragraph 0105).

As to claim 4, Yanai et al. discloses within at least one storage resource located in said requirement range, at least such one storage resource is selected, the geographic distance of

which is far from the geographical distance of another storage resource (See Yanai et al. page 6, paragraphs 0080-0084).

As to claim 7, Yanai et al. discloses with respect to at least a first storage resource contained in said storage group (See Yanai et al. page 21, paragraph 0262),

a requirement range with respect to a geographical distance from said first storage resource is acquired (See Yanai et al. page 3, paragraphs 0029-0031);

a second storage resource is selected from said storage group located within the requirement range with respect to said geographical distance from said first storage resource, or a second storage within the requirement range with respect to said geographical distance from said first storage resource (See Yanai et al. page 5, paragraphs 0064-0066);

copied data as to a least a data portion of such data stored in said first storage resource is stored into said second storage resource (See Yanai et al. page 19, paragraphs 0242-0245); and

in the case that an occurrence of a trouble of said first storage resource is detected, the access request issued from said node, which is transmitted to said first storage resource, is executed with respect to said copied data of the data stored in said second storage resource (See Yanai et al. page 19, paragraph 0239).

As to claim 8, Yanai et al. discloses further comprising the steps of:

in such a case that a geographical location of said node is changed from a first setting position to a second setting position, judging whether or not a logical distance defined from said node set at the second setting position up to such a storage resource which executes an access

request transmitted by said node is located within said requirement range (See Yanai et al. page 1, paragraphs 0011-0013); and

moving data in said storage resource into another storage resource, when the logical distance from said second setting position is located is beyond said requirement range (See Yanai et al. page 16, paragraphs 0202-0204, also see Yanai et al. page 11, paragraph 0140).

As to claim 9, Yanai et al. discloses in a storage network which is arranged by a node for transmitting an access request via a network to a storage; a storage group constituted by at least one storage resource which receives said access request so as to execute a content of the access request; and a management server (See Yanai et al. page 21, paragraph 0262),, said management server comprising:

means for acquiring at least one of a logical distance and a geographical distance from at least one of, said node and said storage resource contained in said storage group, and said storage resources contained in said storage group (See Yanai et al. page 6, paragraphs 0077-0078, and see Yanai et al. page 8, paragraph 0100);

means for acquiring from said node, a requirement range with respect to at least one of said logical distance and said geographical distance (See Yanai et al. page 3, paragraphs 0029-0031); and

means for selecting at least one storage resource for executing the access request issued from said node from said storage group, while at least one of said requirement range with respect to said logical distance and said requirement range with respect to said geographical distance is set as a selecting condition (See Yanai et al. page 21, paragraphs 0258-0260).

***Reasons for Allowance***

5. Claims 5-6 are allowed over the prior art made of record.
6. The following is a statement of reasons for allowance:

The prior art of record (Yanai et al. (U.S. Pub. No. 2004/0073831 A1) does not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim), in such a case that the storage resource located within said requirement range is not present within said storage group, such a storage resource is selected whose at least one of said logical distance and said geographical distance is closer than those of another storage resource from said storage group, as claimed in independent claim 5.

The prior art of record (Yanai et al. (U.S. Pub. No. 2004/0073831 A1) does not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim), in such a case that the storage resource located within said requirement range is not present within said storage group, such a storage resource is newly added whose at least one of said logical distance and said geographical distance is located within said requirement range, as claimed in independent claim 6.

***Response to Arguments***

7. Applicant's arguments filed on December 13, 2004 have been fully considered but they are not persuasive.

In response to applicant's argument on pages 10, and 11, that "Yanai et al. does not teach or suggest wherein at least one of a logical distance and a geographical distance from at least one of the node and the storage resources contained in the storage group and the storage resources contained in the storage group are acquired" is acknowledged but it is not deemed to be persuasive.

The Examiner broadly interpreted the citation in Yanai et al. specifically page 11, paragraphs 0138-0139, and page 12, paragraphs 0148-0150 to teach that since the mirrored cite exist in a geographically remote location it is thereby specified in the log file under a record maintaining the destination address logically and physically in order to provide recoverability. Which is not interpreted to be any different from the argued claimed limitation.

An important concept of application failover is the idea of resource groups or service groups. A service group is a logical collection of resources that are required for a service or application to be available online. An application service is typically composed of multiple resources, some hardware-based and some software-based, all cooperating to produce a single service. For example, a database service may comprise logical network (IP) addresses, the database management system software, underlying file systems, logical volumes and a set of physical disks being managed by the volume manager. If this service group needs to be migrated to another node for recovery purposes, all of its resources must migrate together to recreate the



service on another node, without affecting other service groups. A single large server may host any number of service groups, each providing a discrete service to networked clients. If multiple service groups are running on a single node, then they must be monitored and managed independently. Independent management allows a service group to be automatically recovered or manually idled (e.g. for administrative or maintenance reasons) without necessarily impacting any of the other service groups running on a node. Of course, if the entire server crashes (as opposed to just a software failure or hang), then all the service groups on that node must be recovered elsewhere. The next level of high availability allows for failover from a local cluster to remote location. Today's data availability needs require that availability be guaranteed globally, allowing for uninterrupted access to the information even in the event of a site failure. Geographically dispersed take-over sites add yet another dimension to the enterprise's availability infrastructure. The first step in extending availability beyond a single data center is ensuring that a duplicate copy of the data is available at a remote site. Replication accomplishes this.

In response to applicant's argument on pages 11, and 12, that "Yanai et al. does not teach or suggest that a requirement range with respect to at least one of the logical distance and the geographical distance is acquired from a node and that at least one storage resource for executing the access resource issued from the node from the storage group is selected while at least one of the requirement range with respect to the logical distance and the requirement range with respect to the geographical distance is set as a selecting condition" is acknowledged but it is not deemed to be persuasive.

The Examiner points to Yanai et al. page 3, paragraph 0030, wherein executing the access resource issued from the node from the storage group is selected by outlining how Yanai et al. implements the steps of the main requirement of long distance application failover is that data available in one data center must be replicated at the remote data center. Host-based replication duplicates data at the file-system level. Between the file system and the disk driver is the volume manager, which is software that manages the disks and creates a logical view of the physical devices for the use of the file system. With host replication, the volume manager on the server duplicates the writes to the storage system. Also, see Yanai et al. page 7, paragraphs 0090-0092, wherein the option of selecting the mirror destination is dependent on geographical distance and is maintained/stored in a in the host unit which broadly interpreted by the Examiner to read on the argued limitation.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neveen Abel-Jalil whose telephone number is 571-272-4074. The examiner can normally be reached on 8:30AM-5:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on 571-272-4038. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Neveen Abel-Jalil  
April 17, 2005

  
**SAM RIMELL**  
**PRIMARY EXAMINER**